REMARKS

Claims 21-25 and 33-38 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

Claim 24 recites "wherein the semiconductor region comprises an implanted semiconductor layer".

In rejecting Claim 24, the Examiner states "The scope of the claim is vague, since it is not known if the claim is intended to mean that the dispersed semiconductor region is implanted with some type of dopant, or if the dispersed semiconductor region is itself implanted".

Applicant believes that Claim 24 clearly recites "an implanted semiconductor layer", wherein the semiconductor region is itself implanted. Claim 24 does not recite any type of dopant, so it is not clear why the Examiner would imply such an element. Applicant's definition is clearly supported by the specification at paragraphs [0019] and [0020].

Claim 21 recites "a semiconductor region dispersed in the upper surfaces of the conductive element, the dielectric spacer and the semiconductor substrate".

In rejecting Claim 21, the Examiner states "a term in a claim may not be given a meaning repugnant to the usual meaning of that term. … The term '… semiconductor region *dispersed* …' (emphasis added) in claim 21 is used by the claim to mean 'semiconductor atoms implanted …', while the accepted meaning is 'scattered or evenly distributed.'"

Applicant strongly objects to the Examiner's characterization of the language of Claim 21. The language of Claim 21 in no way suggests that the "semiconductor region" is limited to "semiconductor atoms implanted" as suggested by the Examiner. The Examiner is improperly attempting to add the limitation of "semiconductor atoms

implanted" into the language of Claim 21 (contrary to the language recited by the claim). For this reason, Applicant believes that Claim 21 meets the requirements of 35 U.S.C. 112, second paragraph.

Because Claim 21 meets the requirements of 35 U.S.C. 112, second paragraph, dependent Claims 22-25 and 33-38 also meet the requirements of 35 U.S.C. 112, second paragraph.

Claims 19, 21, 23, 26-30 and 33-36 have been rejected under 35 U.S.C. 102(b) as being anticipated by Wilmsmeyer (U.S. Patent No. 5,387,535).

Claim 19 has been amended to recite "a dielectric spacer located adjacent to a sidewall of the conductive element, wherein an upper surface of the dielectric spacer is silicon-rich". Support for this amendment is found in the specification as originally filed at paragraphs [0019] and [0020]. No new matter is added.

Wilmsmeyer fails to teach or suggest that the upper surface of spacer 6 is "silicon-rich". In fact, Wilmsmeyer does not describe the composition of spacer 6 at all. With regard to Claim 20 (now canceled), the Examiner states that "Silicon-rich oxides and nitrides are known and used in the art for several advantages, such as superior etch selectivity as compared to stoichiometric dielectric layers, as well as better protective properties. It would have been a matter of obvious design choice to incorporate a silicon-rich dielectric into the device taught by Wilmsmeyer since the properties described above are desirable."

In making this rejection, the Examiner is improperly relying solely on Applicant's disclosure for the addition of a silicon-rich spacer. It is well established that it s improper to use the inventor's patent as an instruction book

on how to reconstruct the prior art. Panduit Corp. v. Dennison Mfg. Co., 810 F2d 1561, 1 USPQ2d 1593 (Fed. Cir. 1987).

In accordance with Applicant's invention, the silicon-rich upper surface of the spacer enables the formation of "a continuous silicide strap directly contacting the conductive element, the dielectric spacer and the semiconductor substrate". Wilmsmeyer teaches the formation of a silicide structure 101 without requiring a silicon-rich dielectric spacer. There is therefore no motivation to add the silicide-rich spacer to Wilmsmeyer, outside of Applicant's disclosure.

The fact that the Examiner is able to list "well-known" advantages of a silicon-rich spacer fails to take into account the potential disadvantages associated with such a spacer. For example, a silicon-rich spacer will typically exhibit a reduced resistance, which is generally viewed as an undesirable characteristic of a dielectric spacer. It is improper for the Examiner to pick and choose the advantages of a silicon-rich dielectric spacer, while ignoring the significant disadvantages of such a spacer, to make a case for obviousness.

For these reasons, Claim 19 as amended is allowable over (and not anticipated by) Wilmsmeyer. Claims 26-30, which depend from Claim 19, are allowable over Wilmsmeyer for at least the same reasons as Claim 19.

In addition, Claim 26 recites "a refractory metal layer reacted with semiconductor material in … the dielectric spacer".

Wilmsmeyer teaches that "a double layer of titanium 41 and amorphous silicon 51 is sputter-deposited over the entire surface of the component". (Wilmsmeyer, Col. 3,

lines 19-21.) The structure is annealed to form titanium silicide in the local interconnect regions. (Wilmsmeyer, Col. 3, lines 27-28.) Because Wilmsmeyer teaches that titanium layer 41 is reacted with amorphous silicon layer 51 to form titanium silicide, Wilmsmeyer fails to teach or suggest "a refractory metal layer reacted with semiconductor material in … the dielectric spacer" as recited by Claim 26. For this additional reason, Claim 26 is allowable over Wilmsmeyer.

Claim 21 recites "a semiconductor region dispersed in the upper surfaces of the conductive element, the dielectric spacer and the semiconductor substrate; and a silicide strap formed in the semiconductor region." Although the Examiner indicates that Wilmsmeyer teaches "a semiconductor region" as recited by Claim 21, the Examiner has failed to indicate where Wilmsmeyer provides such a teaching. If the Examiner believes that Wilmsmeyer teaches "a semiconductor region" as recited in Claim 21, it is the Examiner's burden to point out where Wilmsmeyer provides this teaching. Absent this, the Examiner's rejection is prima facie inadequate.

For this reason, Claim 21 is not anticipated by Wilmsmeyer. Claims 23 and 33-36, which depend from Claim 21, are not anticipated by Wilmsmeyer for at least the same reasons as Claim 21.

Claims 20, 22, 24, 25, 31, 32, 37 and 38 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Wilmsmeyer.

Claims 20, 31 and 32, which depend from independent Claim 19, are allowable over Wilmsmeyer for at least the same reasons as Claim 19.

In addition, Claim 20 has been amended to recite "wherein a portion of the dielectric spacer, located away

from the upper surface of the dielectric spacer, is not silicon-rich." Support for this amendment is found in the specification as originally filed in paragraph [0020] and in Figs. 2E-2G. No new matter is added. Wilmsmeyer fails to teach this additional element recited by Claim 20.

Claims 22, 24-25 and 37-38, which depend from independent Claim 21, are allowable over Wilmsmeyer for at least the same reasons as Claim 21.

In addition, Claim 22 recites "wherein the dielectric spacer is silicon-rich". As described in detail above, the Examiner not provided proper motivation for a silicon-rich dielectric spacer. For this additional reason, Claim 22 is allowable over Wilmsmeyer.

New Claim 39 recites "wherein the upper surface of the dielectric spacer is silicon-rich, and wherein a portion of the dielectric spacer, located away from the upper surface of the dielectric spacer, is not silicon-rich". Support for this amendment is found in the specification as originally filed in paragraph [0020] and in Figs. 2E-2G. No new matter is added. Wilmsmeyer fails to teach the additional elements recited by Claim 39.

CONCLUSION

Claims 19-39 are pending in the present application. Reconsideration and allowance of these claims is respectfully requested. If the Examiner has any questions or comments, he is invited to call the undersigned at (925) 895-3545.

Respectfully submitted,

Customer No. 027158

E. Eric Hoffman
Attorney for Applicants
Reg. No. 38,186

I hereby certify that this correspondence is being deposited with the United States Postal Service as FIRST CLASS MAIL in an envelope addressed to: Box Non-Fee Amendment, Assistant Commissioner for Patents, Washington, D.C., 20231-0001, on March 28, 2003.

Date: 3/28/03 Signature: Carrie Reddick